

REMARKS

Each of independent claims 1 and 9 has been amended to more particularly point out and more distinctly claim the subject matter that the applicant regards as his invention. In that regard, claim 1 has been amended to include the subject matter of former claims 3, 4, 5, and 6, each of which has been canceled without prejudice or disclaimer. Claim 9 has been amended to include the subject matter of former claims 10 and 11, each of which has been canceled without prejudice or disclaimer.

Filed concurrently herewith is a Second Information Disclosure Statement that submits for consideration a copy of the International Preliminary Report on Patentability that was issued in connection with the corresponding PCT application, and to which report is appended a set of amended PCT claims. The foregoing amendments amend the U.S. claims to correspond in substance with the amended claims that were presented in the corresponding PCT application. And it should be noted that as a result of those amendments to the PCT claims it was concluded by the International Preliminary Examining Authority that the PCT application as so amended met each of the novelty, inventive step, and industrial applicability criteria of the Patent Cooperation Treaty.

At the outset, it should be noted that of the three references relied upon in connection with the rejections of the claims of the present application, two of those references were cited by the international examiner, who found the claimed invention to satisfy the PCT patentability criteria. In that regard, the international examiner concluded that the EP '746 reference, which corresponds with the U.S.

'841 reference that was cited and relied upon in this U.S. application, and the U.S. '831 reference that was also cited and relied upon in this U.S. application, did not disclose or render obvious the method as claimed in the amended PCT method claims or the burner apparatus as claimed in the amended PCT apparatus claims.

In the present application claims 1-5, 7, and 8 were rejected as obvious based upon the combination of the Nakamachi et al. '841 and the Dugue et al. '831 references. With regard to the Nakamachi et al. reference, the oxidant is air (see e.g., Nakamachi et al., col. 1, lines 60-62), whereas in the present invention as claimed in claim 1 the oxidant utilized in the second step is specified as "a gaseous oxidant that has an oxygen content of at least about 80%." Moreover, as acknowledged by the examiner, the Nakamachi et al. reference does not disclose that in the second step the "combustion occurs at a point spaced from and outwardly of the burner head at a distance of at least a diameter of the burner head" (see Office Action, paragraph 6), and further acknowledged that the Nakamachi et al. reference also does not disclose that "the oxidant is delivered at an overpressure of at least 2 bar" (see Office Action, paragraph 19). And in addition to those differences the Nakamachi et al. reference does not teach or suggest spacing the oxidant outlet openings "from the fuel nozzle at a distance that exceeds half a diameter of the burner head."

With regard to the Dugue et al. reference, which was cited as showing that the spacing of the point at which combustion occurs is outwardly of and spaced from the burner head a distance of at least a diameter of the burner head, it is not possible from the Dugue et al. drawings to determine the burner head diameter.

That diameter would extend outwardly beyond the spacing shown between oxidizer injectors 5 and 6, as illustrated in the Dugue et al. drawing Figures 2, 3, and 4 as installation 1, and that diameter would clearly be less than the distance L shown in the Dugue et al. drawings. Furthermore, because patent drawings are not drawn to scale, in the absence of guidance provided by the verbal description contained in the reference it is improper to base a rejection upon scaled patent drawings.

More significantly, however, the Dugue et al. reference discloses a method in which the flame must be stabilized by the auxiliary oxidizer jet 14 to provide an auxiliary combustion zone 2a (see Dugue et al., col. 4, lines 26-31). Thus, that reference teaches away from the present invention in which, as claimed in amended claim 1, in the second step the oxidizer is "only emitted through oxidant outlet openings located on one side of and spaced from the fuel nozzle at a distance that exceeds half a diameter of the burner head." In fact, the Dugue et al. reference does not teach or suggest a two-step process. In the Dugue et al. reference the oxidizer is emitted from injectors 5 and 6, as well as from auxiliary oxidizer jet 14, the latter of which is next to fuel injector 3, not spaced therefrom "at a distance that exceeds half a diameter of the burner head," as in the present invention as claimed.

Based upon the differences between the invention as claimed in amended claim 1 and the disclosures contained in the Nakamachi et al. and Dugue et al. references, the combination of those references does not render the claimed invention obvious. If the Dugue et al. reference were to be combined with the Nakamachi et al. reference it would lead away from the claimed invention.

Claims 6, and 9-12 were rejected as obvious based upon the combination of the Nakamachi et al., the Dugue et al., and the Karinthy et al. '283 references. The combination of Nakamachi et al. and Dugue et al. was acknowledged not to disclose delivering the oxidant at an overpressure of at least 2 bar, and the Karinthy et al. reference was relied upon for disclosing an oxidant delivery pressure of 12 bar. However, the Karinthy et al. reference teaches an entirely different combustion process, one in which one of the constituents is supplied in liquefied form (see Karinthy et al., col. 1, lines 31-34), and one that does not involve a two-step method, as claimed in amended claim 1, which now includes the subject matter of former claim 6.

With respect to amended claim 9, neither the Nakamachi et al., the Dugue et al., nor the Karinthy et al. reference discloses a two-step burner head in which the burner head includes a fuel supply nozzle and a first oxidant outlet opening adjacent to the fuel nozzle, and additional oxidant openings spaced from the fuel nozzle a distance that exceeds half the diameter of the burner head. Nor does either of those references disclose an arrangement in which combustion takes place during a second operating mode in which oxidant is delivered only to the additional oxidant openings so that combustion takes place at a distance from the burner head corresponding to at least the diameter of the burner head.

Claim 12 depends directly from claim 9, and therefore the same distinctions as are noted above in connection with claim 9 apply with equal effect to that dependent claim. Further, claim 12 recites subject matter that is neither shown nor described in either of the references relied upon.

In connection with each of the obviousness rejections, in addition to the fact that neither of the references relied upon by the examiner individually shows or suggests the invention as it is now claimed in amended claim 1, even if the references were to be combined the combination of their teachings does not show or suggest the claimed arrangement. Significantly, the references themselves contain no disclosures that would motivate one to even attempt their combination, and the examiner has not cited any such motivating disclosure in either of the references. Only by some hindsight guidance gleaned from knowledge of what is contained in the present disclosure would one even consider the disparate methods and disparate structures shown in the references that were relied upon.

Although one could in hindsight assert that there exists a motivation to make a combination of particular references in a particular way, such a hindsight assertion is insufficient. In that regard, for there to be a sufficient showing of a motivation to combine the teachings of references, that motivation must be supported by referring to some relevant and identifiable source of information that would provide the necessary motivation. However, each of the references purports to reduce the production of NO_x (see Nakamachi et al., col. 1, lines 5-9; Dugue et al., col. 1, lines 30-32; and Karinthe et al., col. 1, lines 24-29), and therefore one seeking to achieve that objective would be directed to adopt one of the arrangements disclosed in one of the references – he would not be motivated to attempt to combine them because each claims to solve the NO_x production problem.

Manifestly, the mere existence of particular steps or elements in different references is not sufficient to support an obviousness conclusion based upon their

combination, nor does their mere existence establish a motivation to combine. Indeed, if that were the case nothing would be patentable because all inventions involve some combination of known steps or elements. And conclusory statements of possible advantages that might, in hindsight, lead one to attempt to combine the teachings of several references, as well as assumptions of what an ordinarily skilled person would or would not do, are by themselves inadequate to support a conclusion that there exists a motivation to combine particular references in a particular way. Consequently, the mere assertion of a subjective possible convenience that might be achieved by combining the teachings of different references is insufficient to support a conclusion of motivation to combine and of obviousness of a claimed combination.

Additionally, even assuming one of only ordinary skill in the art, one who is guided by the conventional wisdom and is not an innovator, had before him the references relied upon, it is important to note that the references themselves do not contain any guidance as to precisely how they could be combined to arrive at the invention as claimed herein. In that regard, it is not apparent from the references taken alone which steps or elements of which reference are to be combined with which steps or elements of another reference, and which steps or elements are to be ignored or discarded in arriving at a combination of steps or elements. In short, the references do not contain any teachings or suggestions concerning how they could or should be combined, assuming one even wished to attempt to do so.

Finally with respect to the obviousness rejections, it is submitted that the only motivation for combining the references in the manner the examiner has done is the

disclosure of the present application. But it is an improper basis for rejection to use as a road map, or as a template, an inventor's disclosure to aid in picking and choosing particular parts of particular references that allegedly can be combined to render obvious that which the inventor claims as his invention. It amounts to using against an inventor that which only he has taught. Thus, the invention as claimed herein is directed to an invention that is not obvious from the teachings of the references that were relied upon.

In conclusion, the Office Action indicated that the certified copy of the priority document had not been received. In that regard, in a U.S. national phase application based upon a PCT application, a certified copy of the priority document is not required to be filed in the U.S. national phase application when that document has already been filed with the International Bureau (see MPEP §1893.03(c)II.). Attached hereto is a copy of the NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT, issued by the International Bureau and dated 14 September 2005, which states that that body duly received the certified copy of the Swedish priority document on 30 August 2005. Also attached hereto is a copy of the DO/EO worksheet for this application, which states that one priority document was included in the INTERNATIONAL APPLICATION PAPERS IN THE APPLICATION FILE. Accordingly, acknowledgment of receipt of the certified copy of the priority document is respectfully requested.

Based upon the foregoing amendments and remarks, the claims as they now stand in the application are believed clearly to be allowable in that they patentably distinguish over the disclosures contained in the references that were cited and relied

upon by the examiner. Consequently, this application is believed to be in condition for allowance, and reconsideration and reexamination of the application is respectfully requested with a view toward the issuance of an early Notice of Allowance.

The examiner is cordially invited to telephone the undersigned attorney if this amendment raises any questions, so that any such question can be quickly resolved in order that the present application can proceed toward allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alfred J. Mangels', with a long horizontal flourish extending to the right.

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Alfred J. Mangels
Reg. No. 22,605
4729 Cornell Road
Cincinnati, Ohio 45241
Tel.: (513) 469-0470